

C2end 4. (Amended) The method of claim 1, further comprising increasing the helium content to increase etching of the patterned substrate surface.

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5. The method of claim 1, wherein the substrate surface comprises silicon oxide or silicon nitride.

6. The method of claim 1, wherein the plasma is capacitively and inductively powered.

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C3 7. (Amended) The method of claim 1, wherein the gas mixture is introduced into the processing chamber to establish a pressure from about 1 mTorr to about 200 mTorr.

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8. (Amended) A method for processing a substrate in a processing chamber, comprising:

24 (a) exposing a patterned substrate surface to a plasma generated from a gas mixture consisting of argon, helium and hydrogen; and

(b) increasing the helium content of the plasma to increase etching of the patterned substrate surface, wherein the gas mixture comprises less than about 75% by volume of argon.

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C5 10. (Amended) The method of claim 8, wherein the hydrogen is provided to the processing chamber in a mixture of about 95% by volume of helium and about 5% by volume of hydrogen.

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11. The method of claim 8, wherein the substrate surface comprises silicon oxide or silicon nitride.

12. The method of claim 8, wherein the plasma is capacitively and inductively powered.

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C6 13. (Amended) The method of claim 13, wherein the gas mixture is introduced into the processing chamber to establish a pressure from about 1 mTorr to about 200 mTorr.

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14. (Amended) A method for processing a substrate, comprising:

C6 and (a) exposing a patterned substrate surface to a plasma generated from a gas mixture comprising argon, helium and hydrogen in a processing chamber, wherein the plasma is capacitively and inductively powered; and

(b) increasing the helium content to increase etching of the patterned substrate surface, wherein the gas mixture comprises less than about 75% by volume of argon.

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C7 15. (Amended) The method of claim 14, wherein the hydrogen is provided to the processing chamber in a mixture of about 95% by volume of helium and about 5% by volume of hydrogen.

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16. The method of claim 15, wherein the substrate surface comprises silicon oxide or silicon nitride.

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17. (Amended) The method of claim 14, wherein the gas mixture is introduced into the processing chamber to establish a pressure from about 1 mTorr to about 200 mTorr.

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C8  
C9 18. (Amended) The method of claim 1, wherein the gas mixture comprises between about 25% and about 75% by volume of argon.

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19. (Amended) The method of claim 8, wherein the gas mixture comprises between about 25% and about 75% by volume of argon.

20. (Amended) The method of claim 14, wherein the gas mixture comprises between about 25% and about 75% by volume of argon.

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21. The method of claim 1, wherein the plasma is generated by delivering a power level of between about 10 watts and about 500 watts to the processing chamber.

22. The method of claim 8, wherein the plasma is generated by delivering a power level of between about 10 watts and about 500 watts to the processing chamber.